AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICES CURRENT.

"O fortunatos nimium sua si bona norint
"Agricolas." . . . VIRG.

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HORTICULTURE.

FOR OUR FRIENDS IN THE SOUTH.

Directions for Gardening.

Containing instructions for working a Kitchen Garden; alphabetically arranged. The time for sowing and planting, is calculated to answer for Camden and the adjacent country for twenty or thirty miles; but in a southerly and westerly direction, it may answer double the distance.—By P. THORNTON.

Asparagus

May be sowed early in March, in a small bed of light rich soil, drilled in rows six or nine inches, which would be preferable to broad cast, on account of hoeing and keeping them clear from weeds, covering them one inch deep; should the weather prove dry, water them occasionally; and in twelve months they may be set out in beds of about four feet wide, previously prepared of rich dung, to the depth of twelve or fifteen inches; let them be set out in trenches six inches deep, and each trench fifteen inches asunder; each plant may be set out twelve inches apart—In twelve months they may be fit for use; but in order that the roots might be strong and productive, it would be better to let them stand till the second year.

Beets

May be sowed the last of February or early in March, and in order for a succession of crops, they may be sowed till the last of April; in beds prepared rich and light, four feet wide, in drills fifteen or eighteen inches apart, and covered one or two inches deep; as the plants will admit, thin them out to stand ten or twelve inches apart; early spring Raddish or early Cabbage may be drilled in rows between them without injury, as they will be removed before the Beets get to be of any size—should the fall season prove favourable, they might be sowed in August and come to perfection; but the early sowing is most favourable to this climate.

Beans

Of all descriptions, if the spring be favourable, may be planted from the first of April to the last of May; and the Pole Beans may be replanted still later, in any tolerable light soil; the Bush Beans in trenches two feet and a half wide, covered two inches deep, and when the plants will admit, hoe and thin them out to stand two or three inches apart; the Pole Beans may be drilled from three to four feet apart, according to the height they run, and as the plants admit; thin them to stand ten or twelve inches apart. Windsor Beans being very hardy, and able to stand the frost, may be planted for spring use, in October or early in November, in trenches two and a half feet apart, covered two inches deep; when the plants will admit, they may be thinned out so as to stand five or six inches from each other.

Boorcole.

Is a species of Cabbage, and one of those hardy plants, the leaves of which may be cut without injury to its growth, and will produce a new crop in the course of a month or six weeks—they may be sowed broad cast in small beds, made light and loose, about the last of February or early in March, after raking in the seeds, it would be well to roll or press the ground, in order to make the seed vegetate quickly—when the plants will admit, they may be set out at the distance of two feet apart. It should be observed, that the land must be well manured and in a high state of tillage for the cultivation of this plant which, if kept constantly hoed, will grow very luxuriantly, and in the hottest weather be infinitely more brittle in the leaves than any other cultivated in gardens, which is a certain indication of being a healthy plant. It is worthy of the attention of the farmer or grazier; on account of the rapidity of its growth, and the property of withstanding the effect of severe frosts, while it affords an excellent vegetable for the table, and may be used with advantage for feeding cows and sheep.

Broccoli.

A species of Cabbage, cultivated for the use of the table. There are several kinds of this plant, but the Roman or purple kind is said to be best, and may be sowed about the latter end of February or early in March, and when the young plants have germinated eight leaves, they should be transplanted into nursery beds; the plants being about three or four inches apart, should the weather prove dry, they might be frequently watered. By this management, towards the latter end of May, they may be set out in strong ground of a light soil, and well sheltered, in rows two feet apart, and the plants one foot and a half from each other.

Early Cabbage

May be sowed the last of January, in warm beds of a tolerable light rich soil, either in broad cast or in drills six inches a part, which would be preferable on account of hoeing and keeping them free from weeds; cover them one inch deep, and when the plants will admit, they may be set out in beds previously prepared light and loose, and each plant two feet apart. Late Cabbage may be sowed in May or early in June, and remain in beds till August before transplanting, which may be set out in the same manner as the early ones. Colewarts and Green Cabbage may be sowed any time in February or early in March, and treated as the others, only give them a little more space when transplanted.

Cauliflowers,

The early London Cauliflower may he sowed the middle or last of February, and when they have three leaves, they may be put into nursery beds as the Broccoli, and about the last of April they may be set out or transplanted, where they remain, giving them a good light soil. The late London Cauliflower may be sowed about the last of April, and set out in nursery beds as above, about the last of June; they may be set out where they are to remain, giving them a space of about two feet. Those that are headed, must have the heads shaded by breaking the large leaves over them.

Solid Celery

May be sowed any time in March, on a small bed of light rich soil, either in broad cast or in drills, six or nine inches apart, and covered one inch deep: they may remain in the beds till July, then set out in a very rich soil previously prepared, in trenches three feet apart and a spade deep; lay the earth on each side the trenches; and dig the bottoms, leaving them level; place the plants along the trenches upright, six inches apart and water them; in four or five weeks draw the earth to each side of the plants, breaking it fine; do this in dry weather, and be careful not to bury the hearts; repeat the earthing once in ten or twelve days till the plants are fit for use; the seeds may be sowed once in three weeks after till May, in order to have a succession of crops, by treating and setting them out in the same manner as above.

Kail.

For early Spring Greens, may be sowed about the last of January, in small beds of a tolerable light rich soil, either in broad cast or in drills nine inches apart, and covered one inch deep; as the plants grow and will admit, they may be thinned out for use, and those that remain for seed may be thinned out six inches apart.

Lettuce.

May be sowed for early use the last of January, on warm borders, of a tolerable rich light soil, prepared well and raked fine; they may be sowed either in broad cast or in drills six inches apart, and covered light—when the plants will admit, they may be set out on borders twelve inches apart; in order for a succession, they may be sowed once in three or four weeks till the last of April.

Lavender, Sage, Balm, Tansey, Thyme, Rue, Rosemary, or other Herbs.

May be sowed by the middle of March or early in April, in small beds made light and fine, and drilled in rows nine inches apart and covered lightly, and when the plants will admit, they may be thinned out to stand three or four inches apart, and the following spring they may be set out in small beds eighteen inches asunder, each plant twelve or fifteen inches apart; they might be set around borders.

Mustard.

For early use, may be sowed the middle or last of February, on warm borders, of a tolerable rich and light soil, either in broad cast or in drills nine inches apart, and covered lightly; and in order to save the seed for use, the latter mode of sowing would be best, thinning them out to stand five or six inches apart.

Nasturtiums.

May be sowed any time in March, in light rich earth in drills four feet asunder; drop the seed two or three inches apart, and cover them one inch deep—when the plants will admit, thin them to stand six inches apart, giving them poles to run by; the leaves as well as the fruit are sometimes used for pickles.

Onions

May be sowed by the middle or last of February, but in this climate the fall months or September or October would be the best, and prepared in beds four feet wide, of rotten dung or any very rich soil, a spade deep; the soil should not be too wet or stubborn; when the ground will rake easily, they may be sowed in drills twelve inches apart and covered one inch deep. If the soil is very light, tread in the seed after they are covered, then rake the beds; they should be kept clear of weeds; not draw any earth round the roots; they may be thinned out to stand three or four inches apart, unless such as you are thinning daily for use; those may remain closer till you get them to the distance mentioned—those that are sowed in the fall, must have the buds nipped out, else they are apt to go to seed, and when the leaves wither and die they should be gathered, which should be done in dry weather. Spread them on clean, dry ground for a few days to harden, frequently turning them about, and after carefully cleaning them from the earth, they may be spread on a floor, giving them air when the weather is dry for a few weeks; after that they may be kept from the air, frequently turning them, and picking out any that may be injured. Plant the best and largest Onions for seed, two inches deep, and twelve inches asunder; the plants four or five inches apart—when their heads come out, support the stalks with a stake to each, and when the seed is ripe gather and dry it.

Ockra

May be planted any time in the month of April, in a light soil, drilled in rows three feet apart and covered two inches deep—when the plants are two or three inches above ground, they may be thinned out to stand one and a half or two feet distance, according to the strength of the ground.

Parsnips.

May be sowed about the last of February or any time during the month of March, in beds prepared four feet wide, of a very rich, light earth, dug at least a full spade deep, and drilled in rows eighteen inches asunder, and covered one inch deep—when the plants will admit, they may be thinned at the distance of nine inches apart. Radishes or Cabbage may be drilled between each row, and do well, as they would be removed before they prove an injury to the Parsnip. Pepper-Grass might also be sowed in drills between them at the same time, and would prove no injury—as it is made use of as Sallads, or rather used with Lettuce, it would be removed before the Parsnip got to be of any size.

Parsley.

May be sowed the last of January, or early in February, but would do best sowed in September or October, in small beds of a tolerable light soil, either in broad cast or in drills six inches apart, and covered one inch deep, which might do best; and when the plants will admit, it would be an advantage to thin them out to the distance of three or four inches apart.

Peppers.

May be sowed any time during the month of April, in small beds of a tolerable light, rich soil, drilled in rows fifteen inches asunder, and covered one inch deep—when the plants will admit, thin them out to stand nine inches apart. In order to have a succession for late pickling, they may be planted in May.

English Peas.

For an early spring crop, may be planted any time in December; a tolerable light, rich soil would suit them best, drilled in rows four feet apart, and those that grow very tall, give them five feet space and cover them two inches deep. As the winter often proves too severe, they might do full as well or better, sowed the last of January or early in February; and in order for a succession of crops, they may be sowed once in three or four weeks till the middle of April—they have been proved to do full as well or better, sowed in ridges round the edges or borders of beds, which makes a great saving of ground, and are much easier gathered. Peas that do not require sticks, may be sowed in drills two and a half feet apart, or on the edges or borders of beds, as the other kind.

Potatoes.

Planted from the middle of February to the middle of April, are raised with the greatest success in this climate, as a later planting seldom turns out well, owing generally to the heat and dryness of the summer; a light soil which is neither too dry nor too wet, suits them best; the ground should be well ploughed once or twice previous to planting, and if the ground was ploughed late in the fall, to have the winter exposure, so much the better, in order that the ground might be made mellow and fine; after preparing the ground for planting, lay off trenches three feet apart, six or seven inches deep, and strew in the bottom coarse straw or litter from the stable; then cut your Potatoes, so that there may be two or three eyes in each piece, and drop them on the coarse dung or litter, twelve inches apart, and cover them with earth two or three inches deep, taking care to have the ridges very little above the level of the ground: if the ground be well prepared and free from weeds, two mouldings will be sufficient. Dwarf Garden Peas may be planted with success on the edge of the Potatoes, just as they are coming out of the ground: they serve to keep up the Peas as they grow, and neither prove an injury to each other.—Spring Radish may be drilled in the same row with the Potatoes—only cover them one inch deep: they will be removed for use, before the Potatoes prove an injury to them.

Radish.

May be sowed the last of February, and in order for a succession, till the middle of May; in a light soil, made up in beds three or four feet wide, and drilled in rows ten or twelve inches apart and covered one inch deep—when the plants will admit, thin them out where they touch each other; they may still be thinned out, giving them a greater space till they are done; they will grow quick and be tender by frequently stirring and hoeing round the roots and keeping them free from weeds. Winter Radish may be sowed from the last of August to the middle or last of September, the ground and beds prepared in the same manner as the spring Radish, only drill them in rows fifteen inches apart, and thin them out as soon as the plants will admit, two or three inches apart.

Spinach.

In order to have it for early spring use, may be sowed the last of October, or any time in November, and in order to have a succession of crops, it may be sowed again in February and early in March, in a light good soil, drilled in rows fifteen inches apart and covered one inch deep; and when the plants will admit, they may be thinned out for use, giving them three or four inches space as they advance in size.

Spring Turnip.

May be sowed the middle of February for early use, and again any time in March for a succession, in a light soil, drilled in rows twelve or fifteen inches apart—in order the better to hoe and keep them free from weeds, they may be covered one inch deep; and when the plants will admit, they may be thinned out for use, till they stand three or four inches apart; they are sometimes sowed in broad cast, but the above mode is preferable. Late flat Turnips may be sowed from the first of August to the first of September, either in broad cast or drilled in rows, as the spring Turnip, which is preferable in order to keep them free from weeds—new ground enclosed a year before planting, (which cows have used) is said to be preferable for fall Turnips; previous to sowing, plough it two ways and run a harrow over it, to level and break the ground loose. Hanover Turnips may be sowed from the middle of July to the first of September, but the early sowing will be best if seasonable, as the roots grow large, and may then have time to get their growth before the winter sets in: they require a strong light soil, either spaded or well ploughed; they may be sowed either in broad cast or drills, which would be much preferable, in rows eighteen inches apart, and covered one inch deep—when the plants will admit, they may be thinned out so as to remain ten or twelve inches from each other; in wet seasons they may be transplanted in beds on large squares, giving the plants fifteen inches space. Those roots that are topped late in the fall, and left in the ground during the winter, will shoot out in the spring and make earlier Greens than any that can be procured by sowing.

Vines.

Pumpkins may do well planted among Corn, where the soil is very strong and made light and loose: and in order that they may have room, it would be well to plant the Corn in drills or rows six feet apart, and may be thinned out to stand two or two and a half feet distance, which mode is thought best for Corn: between each row of Corn, the Pumpkins may be planted after the second ploughing and hoeing, in hills ten or twelve feet apart, making the hills nearly level with the ground; as the plants will admit, thin them out, so that only one Vine may remain to a hill—hoe and keep them free from weeds as long as it will admit without injuring the Vines, observing not to hill up the earth much round the root; be sure to take off the first two or three crops when about as large as a goose egg—in taking off the first, it will cause immediately a number instead, and the second time in proportion, and may be continued until the danger of being too late for a growth to ripen. This mode, upon experience, is found preferable—they are said to produce better, planted free from other vegetables, where the ground is strong and well pulverized, and made as level as possible, making the hills at the least ten or fifteen feet apart, keeping the ground loose and free from weeds, as in that mode of cultivation, they are not likely to suffer from drought: they root at every joint, which makes it necessary to have the ground strong and kept loose as they run. All kinds of running Squash may be planted about the first of April, and for a succession of crops, may be planted till the middle or last of May, in a similar soil to the Pumpkins, leaving the hills a space from six to ten feet, according to the kind that runs most, observing only to leave one thrifty plant to a hill: they will do best as the Pumpkins, planted free from other Vegetables, and observe to take of the first growth when young as above. Summer bush Squash may be planted from the first of April to the first of May, in a warm light soil, each hill six feet apart; two or three thrifty plants may be left in each, at the distance of twelve or fifteen inches from each other, as they are cultivated; observe to draw the earth but lightly round the roots. Cucumbers may be planted the first of April, and for a succession, may be continued till the middle or last of May, on a similar light warm soil as the above Vines; and may be cultivated to as good advantage on moister ground, the hills six or eight feet apart, leaving only one thrifty Vine to a hill; put no manure in the hills, as it is too powerful, and will cause them to wilt and die, unless it should be very old and rotten, and put in the bottom, covering it three inches with the common light earth. In order that they may be kept in a flourishing and bearing state till frost, they must have room to run: the ground kept loose and free from weeds, and no Cucumber to be suffered to remain on the Vine till full grown, unless it be such as are wanting for seed. As all Vine seeds are tender, they should not be planted till the ground is warm, as they are apt to get stinted by the cold, and do not flourish as well as those planted later. If the ground should be very dry, it may be well to soak all Vine seeds, till they are nearly sprouted, before planting.

Water Melons.

May be planted about the middle of April, and in order for a succession of crops may be continued planting till the last of May; as they require heat, a warm sandy land suits them best, and may be planted in hills ten feet apart, made level with the earth; and the best manure is said to be hog's dung, where it has been well trodden; and when made up in hills or spread on the earth, let it be mixed with the earth a good depth; let the ground when the seed is covered, be a little lower than a level with the surface, so that it may be level when done hoing; always keep the top of the ground loose and free from weeds; in that state of cultivation, they are said to flourish better without rain than with it, unless light and warm.

Musk Melons:

Require a similar soil and cultivation to Water Melons, but will do on moister ground and with less heat, and may be planted the same time, giving the hills at least six feet space, leaving only one thrifty plant to each hill.

Cantelopes and Small Melons.

May be planted the same time, and will answer with the same soil and culture as the Musk Melon.

Gherkins.

May be planted any time from the middle of April to the middle of June, in hills eight feet apart, leaving only one thrifty Vine on each: as they will bear much heat, they will require a similar soil to Water Melons, and may be cultivated in the same manner.

Gourds.

May be planted the same time, and treated in the same manner with regard to soil and culture as the running Squash, except the Mammoth Gourd, which is said to do best planted about the middle of March, if the spring is any way favourable.

Winter Crook-neck Squash.

As they are very similar to the Pumpkins, they may be planted at the same time, (say from the middle of May till the first of July) and treated in the same manner, both with regard to soil and culture.

White Albany Bush Beans

May be cultivated in gardens, and planted the same time and manner as other Bush Beans, in trenching only the plants will do and bear as well standing nearer to each other: they may be cultivated to great advantage among Corn, planted the same time and treated in the same manner as Cow Peas: they answer well for winter use, when vegetables are often scarce; therefore it may be an object to cultivate them largely for family use.

Ruta Baga.

A fall Turnip lately introduced into America, and is known in the state of New York by the name of the Yellow Russia Turnip. The leaf of every other sort is of a yellowish green, while the leaf of the Ruta Baga is of of a bluish green, like the green of Peas when nearly full grown, or like the green of a young and thrifty early York Cabbage; the outside of the bulb of the Ruta Baga is of a greenish hue, mixed towards the top with a colour bordering on a red, and the inside of the bulb, if the sort be true and genuine, is of a deep yellow. The time for sowing in the state of New-York is from the 25th June to the 10th July, but as our seasons here are much longer, and the latter part of the summer generally hot and dry, it would be advisable not to sow sooner than the 15th July, and not later than the 1st of August.

MANNER OF SOWING, CULTIVATION, QUALITY OF LAND, &c.

As a fine rich, garden mould, of a great depth, and having a porous stratum under it, is best for every thing that vegetates, except Plants that live best in water, so it is best for the Ruta Baga. Cobbett, on the culture of this root, says—"There is no soil in which it may not be cultivated with great facility, except a pure sand or a very stiff clay." A few days previous to sowing, the ground must be ploughed up to a good depth into ridges, having two furrows on each side of the ridge, so that every ridge consists of four furrows or turnings of the Plough, making the tops of the ridges nearly or quite four feet from each other; as the ploughing should be deep, it will of course leave a deep gutter between every two ridges; if the ground be not strong, rotten stable manure may be placed under the middle of each ridge, beneath where the Seed is sowed; the ground being prepared, two or three Seeds may be dropped in places twelve inches apart, observing to drop them so that the Seeds may not touch each other; then draw a little earth over, pressing it on the Seed in order to make it vegetate quickly, before the earth gets too dry; this is always a good thing to be done, even with any kind of Seed that is sowed lightly, especially in dry weather and under a hot sun.—Seeds are very small things, and though when we see them covered over with the earth, we conclude that the earth must touch them closely, we should remember that a very small cavity is sufficient to keep untouched nearly all round; in which case, under a hot sun and near the surface, they are sure to perish, or at least to lie long and until rain comes before they start. As soon as the Plants are fairly up, they may be thinned out with a small hoe, only leaving one to stand singly about twelve inches apart—this is a great point, as they begin to rob one another at a very early age, and if left two or three weeks before they are taken up, they will diminish greatly; as soon as the grass begins much to make its appearance, the tops of the ridges round the Plants may be hoed six inches in width, then with a single horse Plough take a furrow from the side of one ridge going up the field, a furrow from the other ridge coming down, then another furrow from the same side of the first ridge going up, and another from the same side of the other ridge coming down, observing to plough within three or four inches of the Plant; this turns a ridge over the original gutter; then observe to turn these furrows back again to the Turnips; in this manner the weeds are nearly or all quite destroyed; when the weeds again make their appearance, or rather a new hoard starts up, it will be necessary to repeat the same operation with the hoe and Plough as before, which may suffice unless the ground has been uncommonly grassy; should it be necessary to work it the third time, the application of the hoe may answer. The Ruta Baga has been cultivated by giving the ridges a smaller space but has been found not so productive, upwards of one thousand bushels have been raised from one acre, by William Cobbett, on Long Island, New York state. From the above mode and cultivation, the Turnips on an average weighing upwards of seven pounds each; the plants or leaves will be so productive as nearly to touch each other in the middle between the ridges.

Transplanting is a mode said to be preferable; the ground ploughed up and made in ridges as above, the Plants may be obtained from those that are thinned out by the first mode of planting, or from Seeds previously sowed in beds broad cast, and set out in ridges or beds prepared in the above mode: the sooner the Plants are set out after preparing the ground, the better—from the moving and turning of the earth, a new process of fermentation takes place, fresh exhalations arise, which give a supply of food to the newly arrived Plants: this may be done about the middle or last of August: the dryest weather is said to be preferable, so that the ground or beds be made fresh previous to setting out; it is a general custom to wait for rain or wet seasons, in setting out any kinds of Plants, but experience has proved instead of rainy or wet weather, it is the very worst time. The reason is this: if Plants are put into wet earth, the setting stick squeezes the earth up against the tender fibres in a mortar-like state—the sun comes and bakes this mortar into a sort of glazed clod: the hole made by the stick is also a smooth sided hole, which retains its form, and presents on every side an impenetrable substance to the fibres.—In short, such as the hole is made, such it in a great measure remains, and the roots are cooped up in this sort of well instead of having a free course left them, to seek their food on every side; besides this, the fibres get, from being wet when planted, into a small compass; they all cling to tbe tap root, and are stuck on to it by the wet dirt, in which state, if a hot sun follows, they are all baked together in a lump and cannot stir—on the contrary, when put into the ground unwet, the reverse of all this takes place, and the fresh earth will, under any sun, supply moisture in quantity sufficient. The mode of planting is as follows—first, the hole is made sufficiently deep, deeper than the length of the root really requires, but the root should not be bent at the point if it can be avoided: then, while one hand holds the Plant with its root in the hole, the other hand applies the setting stick to the earth on one side of the hole, the stick being held in such a way as to form a sharp triangle with the Plant; then pushing the stick down, so that its point goes a little deeper than the point of the root, and giving it a little twist it presses the earth against the point or bottom of the root; and thus all is safe and the plant is sure to grow. The general and almost universal fault is that the planter when he has put the root in the hole, draws the earth up against the upper part of the root or stem, and if he presses pretty well there, he thinks that the planting is well done; but it is the point of the root against which the earth ought to be pressed, for there the fibres are; and if they do not touch the earth closely, the Plant will not thrive. If the ground was ploughed or prepared in the fall before, so much the better, which should be done as before observed, only the ploughing should be very deep, and the ridges well laid up; in this situation it would by the successive frosts, be shaken and broken fine as powder by March or April; it should then be turned back, always ploughing deep—then previous to sowing, the manure may be put in the ridges, and ploughed and sowed as first described. As the winters at the north are too severe for the Ruta Baga, they are harvested or taken up the 1st of November, and either put up in cellars or in hills, prepared in such a manner as to keep out the frost; in this climate they would keep in the ground during the winter without injury, and are excellent food for cattle, hogs, or sheep, both the tops as well as the roots. By cutting up the roots, and boiling or steaming them with a little meal added, they are excellent food for sows and pigs.

Manner of preserving eggs perfectly fresh for 12 months.

Having provided small casks like oyster barrels, fill them with fresh laid eggs, then pour into each cask, the head of which is supposed to have been first taken out, as much cold thick lime water as will fill up all the void space between the eggs, and likewise completely cover them, the thicker the lime water is the better, provided it will fill up all the interstices and be liquid at the top of the cask, this done, lay on the head of the cask lightly. No farther care is necessary, than merely to prevent the lime from growing too hard, by adding occasionally a little common water on the surface, should it seem so disposed, and keeping the casks from heat and frost.

The eggs when taken out for use are to be washed from the adhering lime in a little cold water, when they will have both the appearance and qualities of fresh laid eggs, the lime preserving them from shrinking or putridity.

Another method.

The most simple and easy mode of preserving eggs is to rub the outside of the shell, as soon as gathered from the nest with a little butter or any other grease that is not fœtid.—By filling up the pores of the shell, the evaporation of the liquid part of the egg is prevented and either by that means or by excluding the external air, which Fourcroy supposes destroys the milkiness, which most people are fond of in new laid eggs, that milkiness will be preserved, for months, as perfect as when the egg was taken from the nest.

Turkey Cement for joining Metals, Glass, &c.

The jewellers in Turkey, who are mostly Armenians, have a curious method of ornamenting watch cases, and similar things with diamonds and other stones by simply gluing them on. The stone is set in silver or gold and the lower part of the metal made flat, or to correspond with the part to which it is to be fixed; it is then warmed gently and the glue applied, which is so very strong that the parts never separate. This glue, which may be applied to many purposes, as it will strongly join bits of glass or polished steel, is thus made.

Dissolve five or six bits of mastic, as large as peas, in as much spirits of wine, as will suffice to render it liquid; in another vessel dissolve as much isinglass which has been previously soaked in water till it is swollen and soft in French brandy or rum, as will make two ounces, by measure, of strong glue, and add two small bits of gum galbanum, or ammoniacum, which must be rubbed or ground until they are dissolved, then mix the whole with a sufficient heat. Keep it in a phial stopped; and when it is used set it in hot water.

A TABLE,

TO SHEW AT A GLANCE THE

Number of Hills or Plants,

CONTAINED IN AN ACRE OF LAND,

At any given distance from each other, from

40 feet by 40 to 1 foot by 1.

40	by	40	0	27	19	by	19	0	120
39	by	39	0	28	—	by	18	6	123
38	by	38	0	30	—	by	18	0	127
37	by	37	0	31	—	by	17	6	131
36	by	36	0	33	—	by	17	0	134
35	by	35	0	35	—	by	16	6	138
34	by	34	0	37	—	by	16	0	143
33	by	33	0	40	—	by	15	6	147
32	by	32	0	42	—	by	15	0	152
31	by	31	0	45	—	by	14	6	158
30	by	30	0	48	—	by	14	0	163
29	by	29	0	51	—	by	13	6	169
28	by	28	0	55	—	by	13	0	176
27	by	27	0	59	—	by	12	6	183
26	by	26	0	64	—	by	12	0	191
25	by	25	0	69	—	by	11	6	199
24	by	24	0	75	—	by	11	0	208
23	by	23	0	82	—	by	10	6	218
22	by	22	0	90	—	by	10	0	229
21	by	21	0	98	—	by	9	6	241
20	by	20	0	108	—	by	9	0	254
—	by	19	6	111	—	by	8	6	269
—	by	19	0	114	—	by	8	0	286
—	by	18	6	117	—	by	7	6	305
—	by	18	0	121	—	by	7	0	327
—	by	17	6	124	—	by	6	6	352
—	by	17	0	128	—	by	6	0	390
—	by	16	6	132	—	by	5	6	416
—	by	16	0	136	—	by	5	0	458
—	by	15	6	140	—	by	4	6	509
—	by	15	0	145	—	by	4	0	573
—	by	14	6	150	—	by	3	6	645
—	by	14	0	155	—	by	3	0	764
—	by	13	6	161	—	by	2	6	917
—	by	13	0	167	—	by	2	0	1146
—	by	12	6	174	—	by	1	6	1528
—	by	12	0	181	—	by	1	0	2292
—	by	11	6	189	18	by	18	0	134
—	by	11	0	198	—	by	17	6	138
—	by	10	6	207	—	by	17	0	142
—	by	10	0	217	—	by	16	6	146
—	by	9	6	229	—	by	16	0	151
—	by	9	0	242	—	by	15	6	156
—	by	8	6	256	—	by	15	0	161
—	by	8	0	272	—	by	14	6	166
—	by	7	6	290	—	by	14	0	172
—	by	7	0	311	—	by	13	6	179
—	by	6	6	335	—	by	13	0	186
—	by	6	0	363	—	by	12	6	193
—	by	5	6	396	—	by	12	0	201
—	by	5	0	435	—	by	11	6	209
—	by	4	6	484	—	by	11	0	220
—	by	4	0	544	—	by	10	6	230
—	by	3	6	622	—	by	10	0	242
—	by	3	0	726	—	by	9	6	254
—	by	2	6	871	—	by	9	0	268
—	by	2	0	1089	—	by	8	6	284
—	by	1	6	1452	—	by	8	0	302
—	by	1	0	2178	—	by	7	6	322
18	by	7	0	345	16	by	3	0	907
—	by	6	6	372	—	by	2	6	1089
—	by	6	0	403	—	by	2	0	1361
—	by	5	6	440	—	by	1	6	1815
—	by	5	0	484	—	by	1	0	2722
—	by	4	6	537	15	by	15	0	193
—	by	4	0	605	—	by	14	6	200
—	by	3	6	691	—	by	14	0	207
—	by	3	0	806	—	by	13	6	215
—	by	2	6	968	—	by	13	0	223
—	by	2	0	1210	—	by	12	6	232
—	by	1	6	1613	—	by	12	0	242
—	by	1	0	2420	—	by	11	6	252
17	by	17	0	150	—	by	11	0	264
—	by	16	6	155	—	by	10	6	276
—	by	16	0	160	—	by	10	0	290
—	by	15	6	165	—	by	9	6	305
—	by	15	0	170	—	by	9	0	322
—	by	14	6	176	—	by	8	6	341
—	by	14	0	183	—	by	8	0	363
—	by	13	6	189	—	by	7	6	387
—	by	13	0	197	—	by	7	0	414
—	by	12	6	204	—	by	6	6	446
—	by	12	0	213	—	by	6	0	484
—	by	11	6	222	—	by	5	6	528
—	by	11	0	232	—	by	5	0	580
—	by	10	6	244	—	by	4	6	645
—	by	10	0	256	—	by	4	0	726
—	by	9	6	269	—	by	3	6	829
—	by	9	0	284	—	by	3	0	968
—	by	8	6	301	—	by	2	6	1161
—	by	8	0	320	—	by	2	0	1452
—	by	7	6	341	—	by	1	6	1936
—	by	7	0	366	—	by	1	0	2904
—	by	6	6	394	14	by	14	0	222
—	by	6	0	427	—	by	13	6	230
—	by	5	6	465	—	by	13	0	239
—	by	5	0	512	—	by	12	6	248
—	by	4	6	565	—	by	12	0	259
—	by	4	0	640	—	by	11	6	270
—	by	3	6	732	—	by	11	0	282
—	by	3	0	854	—	by	10	6	296
—	by	2	6	1024	—	by	10	0	311
—	by	2	0	1281	—	by	9	6	327
—	by	1	6	1708	—	by	9	0	345
—	by	1	0	2562	—	by	8	6	366
16	by	16	0	170	—	by	8	0	388
—	by	15	6	175	—	by	7	6	414
—	by	15	0	181	—	by	7	0	443
—	by	14	6	187	—	by	6	6	478
—	by	14	0	194	—	by	6	0	518
—	by	13	6	201	—	by	5	6	565
—	by	13	0	209	—	by	5	0	622
—	by	12	6	217	—	by	4	6	691
—	by	12	0	226	—	by	4	0	777
—	by	11	6	236	—	by	3	6	888
—	by	11	0	247	—	by	3	0	1037
—	by	10	6	259	—	by	2	6	1244
—	by	10	0	272	—	by	2	0	1555
—	by	9	6	286	—	by	1	6	2074
—	by	9	0	302	—	by	1	0	3111
—	by	8	6	320	13	by	13	0	257
—	by	8	0	340	—	by	12	6	268
—	by	7	6	363	—	by	12	0	279
—	by	7	0	388	—	by	11	6	291
—	by	6	6	418	—	by	11	0	304
—	by	6	0	453	—	by	10	6	319
—	by	5	6	495	—	by	10	0	335
—	by	5	0	544	—	by	9	6	352
—	by	4	6	605	—	by	9	0	373
—	by	4	0	680	—	by	8	6	394
—	by	3	6	777	—	by	8	0	418
13	by	7	6	446	10	by	3	0	1452
—	by	7	0	478	—	by	2	6	1742
—	by	6	6	515	—	by	2	0	2178
—	by	6	0	558	—	by	1	6	2904
—	by	5	6	609	—	by	1	0	4356
—	by	5	0	670	9 6	by	9	6	482
—	by	4	6	744	—	by	9	0	509
—	by	4	0	837	—	by	8	6	539
—	by	3	6	957	—	by	8	0	573
—	by	3	0	1116	—	by	7	6	611
—	by	2	6	1340	—	by	7	0	655
—	by	2	0	1675	—	by	6	6	705
—	by	1	6	2233	—	by	6	0	764
—	by	1	0	3350	—	by	5	6	833
12	by	12	0	302	—	by	5	0	917
—	by	11	6	315	—	by	4	6	1035
—	by	11	0	330	—	by	4	0	1146
—	by	10	6	345	—	by	3	6	1310
—	by	10	0	363	—	by	3	0	1528
—	by	9	6	382	—	by	2	6	1834
—	by	9	0	403	—	by	2	0	2292
—	by	8	6	427	—	by	1	6	3056
—	by	8	0	453	—	by	1	0	4585
—	by	7	6	484	9 0	by	9	0	537
—	by	7	0	518	—	by	8	6	569
—	by	6	6	558	—	by	8	0	605
—	by	6	0	605	—	by	7	6	645
—	by	5	6	660	—	by	7	0	691
—	by	5	0	720	—	by	6	6	744
—	by	4	6	806	—	by	6	0	806
—	by	4	0	907	—	by	5	6	880
—	by	3	6	1044	—	by	5	0	968
—	by	3	0	1210	—	by	4	6	1075
—	by	2	6	1452	—	by	4	0	1210
—	by	2	0	1815	—	by	3	6	1382
—	by	1	6	2420	—	by	3	0	1613
—	by	1	0	3630	—	by	2	6	1936
11	by	11	0	360	—	by	2	0	2420
—	by	10	6	377	—	by	1	6	3226
—	by	10	0	396	—	by	1	0	4840
—	by	9	6	416	8 6	by	8	6	602
—	by	9	0	440	—	by	8	0	640
—	by	8	6	465	—	by	7	6	682
—	by	8	0	495	—	by	7	0	732
—	by	7	6	528	—	by	6	6	788
—	by	7	0	565	—	by	6	0	854
—	by	6	6	609	—	by	5	6	931
—	by	6	0	660	—	by	5	0	1024
—	by	5	6	720	—	by	4	6	1138
—	by	5	0	792	—	by	4	0	1281
—	by	4	6	880	—	by	3	6	1464
—	by	4	0	990	—	by	3	0	1708
—	by	3	6	1131	—	by	2	6	2049
—	by	3	0	1320	—	by	2	0	2562
—	by	2	6	1584	—	by	1	6	3416
—	by	2	0	1980	—	by	1	0	5124
—	by	1	6	2640	8 0	by	8	0	680
—	by	1	0	3960	—	by	7	6	726
10	by	10	0	435	—	by	7	0	777
—	by	9	6	458	—	by	6	6	837
—	by	9	0	484	—	by	6	0	905
—	by	8	6	512	—	by	5	6	990
—	by	8	0	544	—	by	5	0	1089
—	by	7	6	580	—	by	4	6	1210
—	by	7	0	622	—	by	4	0	1361
—	by	6	6	670	—	by	3	6	1555
—	by	6	0	726	—	by	3	0	1815
—	by	5	6	792	—	by	2	6	2178
—	by	5	0	871	—	by	2	0	2722
—	by	4	6	968	—	by	1	6	3630
—	by	4	0	1089	—	by	1	0	5445
—	by	3	6	1244	7 6	by	7	6	774

7 6	by	7	0	829	6 0	by	4	3	1708	5 6	by	2	9	2880	4 9	by	4	3	3157	4 0	by	3	6	3111	3 0	by	2	9	5289
—	by	6	6	893	—	by	4	0	1815	—	by	2	6	3168	—	by	4	0	2292	—	by	3	3	3350	—	by	2	6	5808
—	by	6	0	968	—	by	3	9	1936	—	by	2	3	3520	—	by	3	9	2445	—	by	3	0	3630	—	by	2	3	6453
—	by	5	6	1056	—	by	3	6	2074	—	by	2	0	3960	—	by	3	6	2620	—	by	2	9	3960	—	by	2	0	7260
—	by	5	0	1161	—	by	3	3	2233	—	by	1	9	4525	—	by	3	3	2821	—	by	2	6	4356	—	by	1	9	8297
—	by	4	6	1290	—	by	3	0	2420	—	by	1	6	5280	—	by	3	0	3056	—	by	2	3	4840	—	by	1	6	9680
—	by	4	0	1452	—	by	2	9	2640	—	by	1	3	6336	—	by	2	9	3334	—	by	2	0	5445	—	by	1	3	11616
—	by	3	6	1659	—	by	2	6	2904	—	by	1	0	7920	—	by	2	6	3668	—	by	1	9	6222	—	by	1	0	14520
—	by	3	0	1936	—	by	2	3	3226	5 3	by	5	3	1580	—	by	2	3	4075	—	by	1	6	7260	2 9	by	2	9	5760
—	by	2	6	2323	—	by	2	0	3630	—	by	5	0	1659	—	by	2	0	4585	—	by	1	3	8712	—	by	2	6	6336
—	by	2	0	2904	—	by	1	9	4148	—	by	4	9	1746	—	by	1	9	5248	—	by	1	0	10890	—	by	2	3	7040
—	by	1	6	3872	—	by	1	6	4840	—	by	4	6	1843	—	by	1	6	6113	3 9	by	3	9	3097	—	by	2	0	7920
—	by	1	0	5808	—	by	1	3	5808	—	by	4	3	1970	—	by	1	3	7336	—	by	3	6	3318	—	by	1	9	9051
7 0	by	7	0	888	—	by	1	0	7260	—	by	4	0	2074	—	by	1	0	9170	—	by	3	3	3574	—	by	1	6	10560
—	by	6	6	957	5 9	by	5	9	1317	—	by	3	9	2212	4 6	by	4	6	2151	—	by	3	0	3872	—	by	1	3	12672
—	by	6	0	1037	—	by	5	6	1377	—	by	3	6	2370	—	by	4	3	2277	—	by	2	9	4224	—	by	1	0	15840
—	by	5	6	1131	—	by	5	3	1442	—	by	3	3	2552	—	by	4	0	2420	—	by	2	6	4646	2 6	by	2	6	6969
—	by	5	0	1244	—	by	5	0	1515	—	by	3	0	2765	—	by	3	9	2581	—	by	2	3	5162	—	by	2	3	7740
—	by	4	6	1382	—	by	4	9	1594	—	by	2	9	3017	—	by	3	6	2765	—	by	2	0	5808	—	by	2	0	8712
—	by	4	0	1555	—	by	4	6	1683	—	by	2	6	3318	—	by	3	3	2978	—	by	1	9	6637	—	by	1	9	9956
—	by	3	6	1777	—	by	4	3	1782	—	by	2	3	3687	—	by	3	0	3226	—	by	1	6	7744	—	by	1	6	11616
—	by	3	0	2074	—	by	4	0	1893	—	by	2	0	4148	—	by	2	9	3520	—	by	1	3	9272	—	by	1	3	13939
—	by	2	6	2489	—	by	3	9	2020	—	by	1	9	4741	—	by	2	6	3872	—	by	1	0	11616	—	by	1	0	17424
—	by	2	0	3111	—	by	3	6	2164	—	by	1	6	5531	—	by	2	3	4302	3 6	by	3	6	3555	2 3	by	2	3	8604
—	by	1	6	4148	—	by	3	3	2330	—	by	1	3	6637	—	by	2	0	4840	—	by	3	3	3829	—	by	2	0	9680
—	by	1	0	6222	—	by	3	0	2525	—	by	1	0	8297	—	by	1	9	5531	—	by	3	0	4148	—	by	1	9	11062
6 6	by	6	6	1031	—	by	2	9	2754	5 0	by	5	0	1742	—	by	1	6	6453	—	by	2	9	4525	—	by	1	6	12906
—	by	6	0	1116	—	by	2	6	3030	—	by	4	9	1834	—	by	1	3	7744	—	by	2	6	4978	—	by	1	3	15488
—	by	5	6	1218	—	by	2	3	3366	—	by	4	6	1936	—	by	1	0	9680	—	by	2	3	5531	—	by	1	0	19360
—	by	5	0	1340	—	by	2	0	3787	—	by	4	3	2049	4 3	by	4	3	2411	—	by	2	0	6222	2 0	by	2	0	10890
—	by	4	6	1489	—	by	1	9	4328	—	by	4	0	2178	—	by	4	0	2562	—	by	1	9	7111	—	by	1	9	12445
—	by	4	0	1675	—	by	1	6	5050	—	by	3	9	2323	—	by	3	9	2733	—	by	1	6	8297	—	by	1	6	14520
—	by	3	6	1914	—	by	1	3	6060	—	by	3	6	2489	—	by	3	6	2914	—	by	1	3	9956	—	by	1	3	17424
—	by	3	0	2233	—	by	1	0	7575	—	by	3	3	2680	—	by	3	3	3153	—	by	1	0	12445	—	by	1	0	21780
—	by	2	6	2680	5 6	by	5	6	1417	—	by	3	0	2904	—	by	3	0	3416	3 3	by	3	3	4124	1 9	by	1	9	14223
—	by	2	0	3350	—	by	5	3	1508	—	by	2	9	3168	—	by	2	9	3727	—	by	3	0	4818	—	by	1	6	16594
—	by	1	6	4467	—	by	5	0	1584	—	by	2	6	3484	—	by	2	6	4099	—	by	2	9	4873	—	by	1	3	19913
—	by	1	0	6701	—	by	4	9	1667	—	by	2	3	3872	—	by	2	3	4555	—	by	2	6	5361	—	by	1	0	24454
6 0	by	6	0	1210	—	by	4	6	1760	—	by	2	0	4356	—	by	2	0	5124	—	by	2	3	5956	1 6	by	1	6	19360
—	by	5	9	1262	—	by	4	3	1863	—	by	1	9	4978	—	by	1	9	5856	—	by	2	0	6701	—	by	1	3	23232
—	by	5	6	1320	—	by	4	0	1980	—	by	1	6	5808	—	by	1	6	6832	—	by	1	9	7658	—	by	1	0	29040
—	by	5	3	1382	—	by	3	9	2112	—	by	1	3	6969	—	by	1	3	8199	—	by	1	6	8935	1 3	by	1	3	27878
—	by	5	0	1452	—	by	3	6	2262	—	by	1	0	8712	—	by	1	0	10249	—	by	1	3	10722	—	by	1	0	34848
—	by	4	9	1528	—	by	3	3	2436	4 9	by	4	9	1930	4 0	by	4	0	2722	—	by	1	0	13403	1 0	by	1	0	43560
—	by	4	6	1613	—	by	3	0	2640	—	by	4	6	2037	—	by	3	9	2904	3 0	by	3	0	4840					

IMPORTANT FACTS.

It is stated in Rees's Cyclopedia, article London, that in the year 1700, the average weight of cattle and sheep killed for the London market, was as follows :—An ox 370lbs.—a Calf 50lbs—a Sheep 28lbs—a lamb 18lbs—and that the average weight at present, arising from improvements in the breed and managements of these animals, is as follows :—Oxen 800lbs each; Calves 140lbs each; Sheep 80lbs each; lambs 50lbs each. Such facts are of more weight than an argument ever so long, and ever so good, to convince our agriculturists of the benefits to be derived from improving the breeds of cattle, &c.

Bost. D. Adv.

From the Kentucky Gazette.

WESTERN INTERESTS.

There has been placed in our hands, a letter from the Navy Commissioners, addressed to Col. Richard M. Johnson, our able and indefatigable supporter of the interests of the western country. The letter encloses two documents which will be found below :—the one on the subject of the manufacture of *sail cloth, cordage*, &c. and the other on the culture of hemp in Russia. We scarcely know which to admire most, the zeal of our senator in communicating with the navy tribunal on this interesting topic, or the promptness and candour of the reply. We shall give the letter in our next.*

Observations on the Method of cultivating and preparing Hemp in Russia.

In Russia when the season is mild, the Hemp seed is sown about the 1st of June old style.—The richer the soil of the land employed for it, the better : a Chetwirt seed (one hundred Chetwirts are equal to 73 quarters, Winchester measure) is sown on a piece of land of 80 fathoms English long ; and 50 fathoms broad. The land is first ploughed and harrowed, and about 200 single horse loads of dung being spread upon it, it is left for six days when it is again ploughed and the seed is sown and harrowed the same day. In about four months the seed becomes ripe, and the Hemp is then pulled up with the roots. If it be allowed to remain too long in the ground, it is apt to become too harsh. It is bound into heads or bunches of four hands full each, these are hung upon sticks placed horizontally, and allowed to remain so for two days. It is then made into cut or threshed hemp, as may be most agreeable. The cut Hemp is made by cutting off the heads containing the seed, these are put into the kiln, and after remaining there 18 hours, the seed is beaten out. If threshed hemp is to be made, the heads or tops must not be cut off, but the bunches of Hemp placed entire in the kiln, and if the weather be warm, it will be sufficiently dry in three days, when the seeds must be threshed out of the heads. In either case three days after the seed is separated from it, the hemp must be put to steep or rot either in a stream or pond, and, that the hemp may be entirely emersed it is put under wooden frames upon which stones are placed, or where they are not to be had, earth is substituted, after the frames are covered with planks.—The clearer and purer the water the better will be the colour of the hemp. Where the water is warm, three weeks steeping will be

* We have never seen the letter.

sufficient. But if cold, as in Rivers, Springs, &c. five weeks or longer may be necessary.—At the expiration of this period, a head of the hemp is taken out and dried. If on beating and cleaning it, the husk comes off, the hemp may then be taken out of the water; but if the husk still adheres to it, it must be allowed to remain some time longer. The trial must be repeated from time to time till the husk separates, when the hemp must be taken out of the water and suspended to dry as before directed, on its being taken off the ground, the hemp is made into two sorts, distinguished by the names of Spring and Winter hemp, the former being dry and rather of a withered appearance, the latter more moist and of a fine brownish green colour, containing more of the vegetable oil, and therefore the most apt to heat, though if not shipped at St. Petersburg, or Riga, before September, there is not much risk of its heating any more on board the ships, especially in a short voyage, as to England, and are the best for cables. If it be intended that the Hemp should be early ready for market, it is made into Winter Hemp by the following process: On being taken out of the water, it is left suspended in the open air for about a fortnight where it is put in the kiln for 24 hours, after which it is broken by means of a hand-mill, and the husk is then beaten off by striking the heads obliquely with iron and wooden instruments of a large two edged Knife. Lastly, to unravel it is drawn through a wooden comb or card with one row of wide wooden teeth fixed perpendicularly.

The Hemp is then laid up or suspended in sheds, and is fit to be sorted, bound into bundles, and loaded into barks.

The Hemp to be prepared as Spring hemp is allowed to remain suspended and exposed to the weather the whole winter, until it be dried by the sun in the Spring, when it is broken and cleaned in the same manner as Winter Hemp. As the greatest part of the Summer elapses before it can be made fit for the market, none of this hemp reaches St. Petersburg until the following Spring. That is two years after it was sown. The Hemp is sown in the same manner as Lintseed, Rye or Wheat.—Land of a sandy soil may also be employed for it, but then it must be strongly manured, otherwise it will be too short, and a flat country should always be preferred.

One Chetwirt of seed commonly yields 22 loads (upwards of 36 English) of Hemp and 12 Chetwirts of Hemp seed.

Observations on the Manufacture of Sail Cloth.

A well conducted factory of SAIL CLOTH, in a country where labour is not dear, and where the climate and soil are adapted to the growth of the material of which it is made, and whence it is of easy and cheap transportation to market, could not, it is believed, fail to yield ample remuneration for the capital and labour employed in it.

In the manufacture of Sail Cloth, flax is preferred, both for the chain and waft. The yarn is spun by machinery—and both warp and weft yarns are thoroughly cleansed before they are wove, by steeping, in plain hot water, washing and boiling twice, with pot and pearl ashes.—The operations of steeping, and boiling, should it is believed, be performed as follows:

FOR THE FIRST BOIL.

The yarns to be steeped under cover in plain hot water, without any admixture of acids or their deleterious substances, until fermentation begins to subside, which will generally take place about five days in summer, and 8 in spring or autumn, and when taken out of the steep, to be well washed, viz: The warp yarns each mill full, six minutes—and the waft yarns each mill full, twelve minutes. The yarns are then to be hand washed in a considerable stream of clear running water, or through a five or six inch pipe of clear water and wrung. After this they are to be boiled from 6 to 8 hours according to the strength of the fire (and the boiler having neither nettings or falsebottoms) with the following proportion of ashes.

2lbs. best American pot, } to 48 pounds
1lb. best St. Petersburg Pearl, } of yarns.

and to be again hand washed as above and wrung. And then to be put on poles, properly shaken out and hung in the open air where they must remain from 14 to 21 days, as the weather may render necessary, care being taken to turn and shake out the hanks at least every second day.

FOR THE SECOND BOIL.

The yards to be again washed as above and wrung, and afterwards to be boiled for six hours with the following proportion of ashes, viz: 2lbs. best American pearl to 48lbs. of yarns, to be again hand washed and wrung, and then to be put on poles, properly shaken out and hung in the open air from 7 to 14 days according to the state of the weather, and if not then dry, to be dried in a stove or drying house; and it is now ready to be wove on bobbins, warped and put in the loom.

None of these operations of preparing the yarns can be performed during the months of November and December, or January—and seldom in February, except it be in very mild and temperate climates.

As to the method of weaving, it has been observed that the cloth can be woven equally well, either by power or hand; but is believed that the manufacturer would find it greatly to his interest to weave by power. The cloth when wove is 20 inches wide, and each bolt contains 40 yards. There are 8 numbers used in the American service, their weight and price are as follows:

No. 1	weighs	45lb.	6	price	$22	50
" 2	"	42	6	"	22	25
" 3	"	33		"	22	00
" 4	"	37		"	21	75
" 5	"	33		"	19	00
" 6	"	30		"	18	00
" 7	"	27		"	17	00
" 8	"	24		"	16	00

Although it has been stated previously, that flax is preferred in the manufacture of sail cloth, yet some are of opinion that hemp sown very thick, and pulled at a period to produce a fibre or hurd, on a medium between the ordinary hemp and flax, would be fully as good, as flax for all the heavy numbers of canvas. This it is believed, would be highly profitable to the agriculturist.

FROM THE EDINBURGH FARMER'S MAGAZINE,

for August 1820.

Method of ascertaining the Richness of Milk.

Many considerations render it a matter of great importance in rural economy, to ascertain the richness of Milk with faculty and precision.—The richness of this fluid depends principally on the quantity of oil or butter, and curd or cheese, which it contains.

The relative quantities of these valuable ingredients, in the milk of different cows, may be discovered with an accuracy more than sufficient for all useful purposes, by ascertaining the specific gravity of the milk, in different states. The beads invented and manufactured by Mrs. Lovi, of Edinburgh, afford the readiest way of trying these specic gravities; and the method of using them is the following—

Pour fresh drawn milk into a glass vessel, and as soon as its temperature falls to the 60th degree, as shown by a thermometer plunged into it, discover by trial a bead which will remain suspended in any part of the liquid. For this purpose, first introduce number 24; and if it rise to the surface, remove it, and try 25; if it swim, try 26, and so on, until a bead is found which does not rise to the surface, nor yet sink to the bottom, but continues stationary in any part of the liquid. The number upon that beat denotes the specific gravity of the milk, and is to be carefully noted.—A quicker way consists in throwing all the beads at once into a larger vessel of the milk; probably some will sink, and some swim. The one which remains suspended, indicates, the specific gravity. If none be in that situation, then observe the last bead that swims, and the first which sinks, and the number intervening between them, is the specific gravity. Thus, if 25, 26, and 27 swim, and 28, 29, 30, &c. sink, 27½, which is the number intermediate between 27 and 28, expresses the specific gravity. *Next*, allow the milk to stand 24 hours, or till all the cream has risen; after removing it bring the skimmed milk to the temperture of 60 degrees, and ascertain its specific gravity in the manner already described.

As the oil, which has separated in the form of cream, is the lightest ingredient, the specific gravity of the skim milk will be found greater than before; and the larger the quantity of cream, the greater will be the difference, of specific gravity.

This differencc, therefore, affords a sure indication of the relative quantities of oily matter, or butter.

Thus if entire milk possesses a specific gravity of 29, and the skimmed milk, on one occasion have a gravity of 35, but on another of 32 only the difference, in the first case, amounts to six degrees, and, in the second, to three degrees; and the milk of the first example will afford nearly twice as much butter as that of the other and so on in every other proportion.

Or if one milk at 30, have its specific gravity increased to 34, by the removal of the cream and another at 28 rise to 32, then, as the differences are the same, the quantity of butter which they will afford, will be nearly the same.

In this manner, the relative quantities of oil, contained in milk, is discovered; and, to ascertain the proportions of the curd or cheese, curdle such a quantity of the skimmed milk as will afford a sufficient quantity of clear whey; then bring it to the temperature of 60 degrees, and ascertain its gravity.

As the curd is a heavy ingredient, the specific gravity of the whey will be found to be less than that of the skimmed milk; and the larger the quantity of the curd, the greater will the decrease be.

The difference, consequently, in the gravities, affords an indication and measure of the relative quantities of curd.

Thus, if skimmed milk stand at 36, and the whey in one instance at 32, and in another at 34, it may be inferred that the first will yield about twice as much cheesy matter as the second, and so in all other proportions.

It is most accurate to try the specific gravities of the milk, in all its states, at the temperature of 60. But if any circumstance prevent this being done, and they are tried at any other temperature, then, for every four degrees of deviation from the 60th degree of temperature, make an allowance of one degree of specific gravity; and, if the temperature be above 60, add the allowance to the number actually found; if the temperature be below 60, deduct it.

Thus if the milk possess, at temperature 68 degrees, a specific gravity of 28, as the excess of temperature above 60 degrees amounts to 8 degrees, or twice four, make an allowance of two degrees on account of the temperature, and add them to the 28: consequently 30 will be the number expressing its specific gravity, at the standard temperature of 60 degrees.

Again, if the trial be made when the milk is at temperature 52, and the specific gravity be found to be 32, make the allowance of 2 degrees, but deduct them from the amount found, and the remainder, or 30, will denote the specific gravity.

It has been found from experiment, that the Beads applicable to the different kinds of Milk examined, are the following.

Womans' milk, from	30 to 38
Cows'	24 to 34
Asses'	34
Goats' (house fed)	34

Cows' milk, when the cow was fed on grass, before being creamed, was 32: after the cream was taken off. 40

The milk of ewes, also grass-fed, was 36 before it was creamed; and after the cream was taken off, it was. 48

Mares' milk was found to be 36

Note. *It appears that woman's milk and asses' milk afford scarcely any cream.*

ADVANTAGES OF THE BEADS.

The advantages to be obtained from this mode of discovering the richness of milk, are so obvious as scarcely to require enumeration.

1*st. It affords an easy method of estimating the value of a milch cow. By taking into view the quantity of milk, and its quality, the merits of the animal may be justly determined.*

2*d. It affords the best means of judging of the fitness of a cow, for a butter or cheese dairy.*

3*d. It affords ready means of trying the effects of particular kinds of food upon the milk of cows.*

4*th. It affords means of determining the value of particular pastures.*

5*th, It affords excellent checks upon the fidelity as well as the skill and attention of the dairy servants.*

N. B. It is proper to observe, that these beads indicate the real specific gravities, and are made to speak the common language of science, by adding 1000 to each number; thus, a specific gravity of 30, as expressed by these beads, means 1030, in reference to the gravity of distilled water, taken as 1000.

We here resume the publication of extracts from an English work on the diseases of live stock; selecting such particulars as appear to be of most common occurrence amongst farmers generally, omitting others that seem to be in a great measure superfluous.

Cordials. Medicines are thus termed which possess warm and stimulating qualities, and give temporary energy to the stomach, and consequently to the whole system. The indiscriminate use of cordials is certainly highly pernicious; but when a horse is exhausted by violent or long continued exertion, they may often be given with advantage; and on such occasions, will be found more efficacious, if mixed with a pint of ale and given as a drench. As cordials are so generally given on almost all occasions by grooms and farriers, it may be asked how it is that so little apparent mischief is done by them? The reasons are, first, that the ingredients of which the greater part of them are composed are nearly inert with respect to the horse, in the quantity which generally forms a dose. And, in the second place, it should be considered that, supposing the cordial to be composed of active ingredients, it is not by one or two doses improperly given, that the injury is done: a frequent repetition of the practice however, will gradually weaken the stomach and other parts concerned in digestion, and thereby ultimately produce some formidable disease; from this cause perhaps, a liability to flatulent colic and indigestion often proceeds. I believe that every good effect that can be expected from cordials, may be obtained from ginger, caraway seeds, and aniseeds, recently powdered; but if the seeds cannot be procured in this state, their want of sufficient strength may be supplied by the addition of a small quantity of the essential oil, either of caraway, or aniseed, or both.—Cascarilla bark, may perhaps be a useful addition, when the stomach has been much weakened and flatulency and indigestion have already taken place, and on such occasions the cordial should be exhibited in warm beer or diluted spirit: hot brandy and water, is I conceive, the best vehicle in such cases. A variety of formulæ for cordial balls may be found in the author's *Veterinary Pharmacopæia*, or 2d vol.

Costiveness or Binding of the Belly. By this term is implied a preternatural or morbid detention and hardening of the excrement, a disease to which every animal is subject, but the horse perhaps more than any other. It arises for the most part from want of exercise, when a horse is kept upon hard dry food, as oats or beans; but in some horses it appears to be habitual. Costiveness is often the cause of colic, and sometimes of inflammation of the bowels, therefore whenever it is observed, a dose of laxative medicine should be given, and opening clysters thrown up to remove any hard excrement that may be lodged in the rectum or last gut. (See *Clysters.*) To prevent a return of the complaint, regular exercise and a change of diet are necessary; green food is the best for the purpose, but if this cannot be procured, bran mashes should be substituted. When a horse is naturally disposed to costiveness, a bran mash should be given twice or three times a week instead of oats, and now and then a little green food. Cattle also are liable to a dangerous kind of costiveness, termed *fardel bound;* and in this case, there is sometimes an appearance of slight purging, probably from the liquid parts passing between the indurated excrement and the gut, by which the practitioner may be deceived. A laxative or purging drench should be given in this disease without loss of time. (See *Laxatives* and *Purgatives.*) Calves also are subject to costiveness, particularly when first put to dry meat; it is highly necessary in this case, to give immediately some laxative medicine. The following formula will be found to answer the purpose; Epsom or Glauber's salt, from three to six ounces according to the age and strength: Castor oil from two to four ounces. When costiveness appears to have brought on any degree of fever, which is indicated by quick pulse and redness of the membrane under the eye-lids, and this is often the case in horses; or, if it is accompanied with uneasiness or pain in the bowels, it will be proper to bleed the animal.

Cough, Chronic. This disorder is often a consequence of a neglected cold, and is sometimes caused by allowing a horse that has an indordinate appetite to eat too much hay and drink too much water; it may also be produced by what is termed Foul Feeding, that is, when a horse is disposed to eat his litter in preference to hay. Indeed, we often find, that horses with voracious appetites, when stinted in hay, will soon eat their litter, however filthy it may be. For the first kind of cough, bleeding, mashes, and a dose of the following powder twice a day are perhaps the best remedies; taking care that the horse is not exposed to wet or cold, until the disease is perfectly removed; should this fail, let some pectoral balls be given, for which a variety of receipts may be found in the author's first volume of *Veterinary Medicine*, page 360, or in the *Veterinary Pharmacopæia*—The powder is to consist of one ounce of nitre and two drams of emetic tartar, and this should be continued until the horse stales considerably more than usual. With respect to the second kind of cough, or that which is caused by a voracious or foul feeding, no good can be expected from medicine, unless the horse's diet be properly regulated; he should be allowed only a moderate quantity of hay and water; taking care that the former is of the best quality, not mow-burnt, and free from dust. To prevent him from eating his litter, he should constantly wear a muzzle, except at the time he is eating his allowance. The medicines employed for the cure of chronic cough, are very numerous. In the formulæ recommended by writers on farriery, we generally find galbanum, assafœtida, ammoniacum, Barbadoes tar, balsum of sulphur, balsam of Peru, garlic, castile soap, cinnibar, &c. in short almost every article in the Materia Medica has been occasionally put in requisition to subdue this formidable disorder; and after all, I believe it will be acknowldged by those who have given every plan a fair trial, that much more may be done by proper attention to the horse's diet and exercise, than by any of them or all of them put together. It should have been observed before that horses with chronic cough should have their bowels kept rather open than otherwise, by giving occasionally bran mashes; and if necessary, a small dose of laxative medicine.

Cows Delivery of. This subject has already been treated of under the head *Calving.* I trust however, the following general rules given by Mr. John Lawrence in his *Treatise on Cattle Medicine*, will not be

thought superfluous:—Timely assistance before the cow is exhausted. Extraction never to be attempted in an improper position: supple the hand and arm with warm water and fresh lard: examination best made, the cow standing, and in the interval of the pains. In pulling at the feet enclose the claws in the hand, that the horn may not bruise the cow: navel string bursting and the usual flux of blood of no consequence. Instruments to be used only in the last resort and by experienced and steady persons only. The proper hook is of hard iron, four inches long with a loop for the cord at the straight end. See *Calving*.

Cracks in the Heels. These are generally a consequence of negligence or want of cleanliness; sometimes they occur, particularly in winter, without any fault of the groom. After washing the cracks with soap and water, and afterwards with warm water alone, that no soap may remain on the sores, take of finely-powdered alum, one ounce; pipe-clay powdered, two ounces—water enough to form them into a thin paste about the consistence of cream. This paste is to be spread over the heel with a soft painting-brush, and repeated for three or four days, by which time the cracks will be found nearly healed. It will then be necessary, in order to soften the parts, to apply the following ointment:—bees' wax, two ounces; best olive oil, six ounces; melt them over a very slow fire, and then add of white lead, finely powdered, two ounces—let the whole be thoroughly mixed. These cracks are merely local, though by their irritation they sometimes cause swelling of the leg. The horse should be turned loose into a box, and be fed with bran-mashes: exercise will rather tend to retard the healing of the cracks, particularly if it exceed walking, or if the horse be taken upon wet or dirty roads. When cracks are much inflamed and very sore, it will be proper to apply a poultice for two or three days before the astringent paste is used. If any medicine is given, perhaps the diruretic alterative is most useful; and as the horse is not to be exercised, it may prevent any ill consequence which might otherwise ensue.

Crib-biting. A disagreeable and injurious habit which young horses sometimes acquire; it consists in their laying hold of the manger with their teeth, and apparently sucking in air; making at the same time a peculiar noise. Some writers have imagined that crib-biting depends upon flatulency or some irritation in the stomach, and that there is more probably an expulsion than a swallowing of air, I have seen a horse's belly swell considerably after crib biting, and in some instances they will contrive to suck the air, as it is termed, without laying hold of any thing; besides, it is well known, that by placing a healthy young horse near a crib-biter, he will generally, in a short time, acquire the same habit. The usual mode of preventing it is to put a leather round the neck, as tight as can be, without impeding swallowing or breathing. Another plan is to cover the edge of the manger with a sheep's skin, the wool side outward. Others have recommended keeping straw in the manger, and abridging his allowannce of hay, or taking away his rack and manger, making him eat his hay from the ground, and his oats from a nose-bag It is a vice which certainly lessens the value of a horse considerably, as it tends to induce weakness of stomach, and consequently indigestion, and flatulent colic

NORTH CAROLINA PRODUCE.

Extract of a letter to the Editor—dated

"PLYMOUTH, N. C. 20th Oct. 1820.

"From a single grain of Siberian Wheat, there was raised on the farm of David Clarke, Esq. in Scotland Neck, (about sixty miles above this) during the present year, 1660 grains, all well filled. I know not whether a product like this is usual.—If not it may tend to shew the fitness of our soil for the cultivation of this grain. From a half pint of wheat sowed in ground, on which no more than ordinary attention was bestowed, 32½ pints was reaped, shewing an increase of 65 to 1."

THE FARMER.

BALTIMORE, FRIDAY, NOVEMBER 17, 1820.

☞ Persons subscribing to this paper for less than one year, will have to pay 25 cents for each number.

Present Prices of Country Produce in this Market.

RED WHEAT last sales, at 78 cts—Old CORN 33 to 36 cts.—New do. 32 cts.—RYE, 42 cts.—OATS 26 cts.—HAY, per ton $17—STRAW, do. $7—FLOUR, from the wagons $4 12½—WHISKEY, from do. 33 to 34 cts. PORK, per bbl. $14—BEEF, do. $11 to $13—BUTTER, per lb. 25 to 31 cts—EGGS, per doz. 18 to 20 cts—VEAL, per lb. 6 to 8 cts—LAMB, per quarter, 37½ to 50 cts—BEEF, per lb. prime pieces 8 to 10 cts.—HAMS, 12 to 14 cts.—MIDDLINGS, 10 cts.—CHICKENS, per doz. $2 50—POTATOES, 37½ cts.—LIVE CATTLE, $5 50 to $6—London WHITE LEAD, $4 25—American do. $3 75—Boiled OIL, $1 37½—FEATHERS, 50 to 62½ cts.—TAR, $2 25—TURPENTINE, soft, $2 25—SPIRITS, do. 35 cts.—PITCH, $2 25—LARD, 11 to 12 cts—SHINGLES, best deep Creek, $8 50—Do. small $4 75—FLOORING PLANK, 5-4 $26—COTTON, Upland, 17 to 19 cts.—Maryland TOBACCO, 2 hhds. Calvert crop, at $7—5 hhds. seconds, at $4—2 hhds. crop, do. do. 1 at $8, 1 at $11—2 do. do. crop, 1 at $7 50,—1 do. do. seconds, at $7—2 hhds. crop, from Charles County, 1 at $8, 1 do. at $6 50—2 do. seconds, at $4.

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(NEARLY OPPOSITE THE BANK OF THE UNITED STATES.)

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IN FOUR VOLUMES OCTAVO.

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The preceding edition of Dr. Thomson's Chemistry had acquired so much reputation both in England and upon the continent of Europe, that a new edition, comprising the new facts with which the science had been enriched, and the new views of the subject which extended knowledge had suggested as indispensible, was eagerly looked for by the scientific world. A new edition has accordingly appeared wherein the former edition of five volumes, has been condensed into four.

All the new discoveries, and all the new theories of Chemical Phenomena, have been considered and embraced in the present improved edition: so that it is indispensable to the chemical student, as presenting the only condensed view of the changes and alterations in chemical doctrine, which the discoveries of the last ten years have suggested. No apology therefore can be necessary for reprinting such a book in this country; for the press does not furnish a substitute for it. But, there is so much theoretical suggestion—so much abstruse calculation—so much fact of dubious authority—and so much theory of dubious validity—that notes and illustrations are absolutely necessary, not merely to render the book more useful but more intelligible.

Under these impressions, I have thought fit to write notes in illustration (and sometimes in contradiction) of the work itself, rather than to make any abridgment of it. Those who wish to know the modern views of chemical science, *must* peruse it; and to very many who will be anxious to study it, elucidation will be necessary. I have endeavoured to supply these, to the best of my ability: regardless whether my own opinions are in dissonance or coincidence with those of my author: leaving to the reader to decide bet veen us.

THOMAS COOPER, M. D.

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UN PEU DE TOUT.

PROSPECTUS.

The eminent station which the Western States of America have already attained, and the rapid advances which they are making in moral improvement, warrant the belief, that the period has arrived when a Literary and Scientific Journal may be commenced with a certainty of adequate encouragement and permanent usefulness.

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Well written disquitions on all the Arts and Sciences will find a ready admission into this Journal; and we will gratefully receive original tracts and essays an all subjects, calculated to afford amusement or instruction to society.

The Statistics, Geography, Geology, Antiquities, Civil and Natural History of the Western States will form prominent objects of our labours, and inquiries.

We will occasionally give an analysis of important works; but it is beyond the scope of our plan to review at large new publications: there is already in this town a Journal established for that purpose, and the numerous reviews printed elsewhere ought to satisfy those who cannot read and think for themselves.

Local politics and sectarian controversies shall be excluded from our pages; but political science and metaphysical disquisitions will be admitted. We wish to render this Journal a Cyclopædical Repository, in which every subject may find a place.

Several literary and scientific gentlemen have pledged themselves to conduct, and contribute to this Journal, They will use every effort to render it a useful vehicle of general knowledge, and they earnestly solicit the countenance and co-operation of all who feel any interest in the reputation and moral improvement of the Western States.

LEXINGTON, (KY.) OCTOBER 7th, 1820.

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☞ No subscription will be received for less than one year or volume.

BALTIMORE,

PUBLISHED EVERY FRIDAY,

BY JOHN S. SKINNER, EDITOR.